

# New synonymy of *Proceratium williamsi* Tiwari (Hymenoptera, Formicidae)

Himender Bharti<sup>1</sup>, Aijaz Ahmad Wachkoo<sup>1</sup>

<sup>1</sup> Department of Zoology & Environmental Sciences, Punjabi University, Patiala - 147002, India

Corresponding author: *Himender Bharti* (himenderbharti@gmail.com)

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## Abstract

*Proceratium bhutanense* De Andrade, 2003, **syn. n.** is here found to be conspecific with *Proceratium williamsi* Tiwari, 2000 and accordingly treated as a junior synonym.

## Keywords

Ants, *Proceratium bhutanense*, *Proceratium williamsi*, synonymy, India

## Introduction

At present 79 extant and 5 fossil species are listed in the ant genus *Proceratium* across the globe (Bolton et al. 2007; Bolton 2012). In India, this genus is represented by two species (Bharti 2011). *Proceratium williamsi* was described by Tiwari (2000) as the first record of the genus from India; shortly afterwards De Andrade (2003) added *P. bhutanense* to the Indian *Proceratium*.

Unfortunately, Baroni Urbani and De Andrade (2003) left out *P. williamsi* from their global taxonomic revision of *Proceratium*, possibly due to lack of access to an obscure paper published locally. However, re-examination of both Indian species finds them conspecific. The specimens of *P. williamsi* collected by R. Mathew from the type

locality Meghalaya, Khasi hills, Shillong also form part of the material examined for *P. bhutanense*. Descriptions, morphometrics, line drawings, images and collection localities of two are also akin. Therefore, *P. bhutanense* is considered here as a junior synonym of *P. williamsi*.

## Material and methods

The morphological observation was conducted on a Nikon SMZ 1500 stereo zoom microscope. For digital images, MP evolution digital camera was used on the same microscope with Auto-Montage (Syncroscopy, Division of Synoptics, Ltd.) software. Later, images were cleaned as required with Adobe Photoshop CS5.

Abbreviations of the specimen depositories are:

<b>BMNH</b>	The Natural History Museum, London, England, U.K.
<b>MRSN</b>	Museo Regionale di Scienze Naturali, Torino, Italy.
<b>NHMB</b>	Naturhistorisches Museum Basel, Switzerland.
<b>PUPAC</b>	Punjabi University Patiala, Ant Collection, Patiala, India.
<b>ZSIK</b>	Zoological Survey of India, Kolkata, India.

## Results and discussion

### *Proceratium williamsi* Tiwari, 2000

[http://species-id.net/wiki/Proceratium\\_williamsi](http://species-id.net/wiki/Proceratium_williamsi)

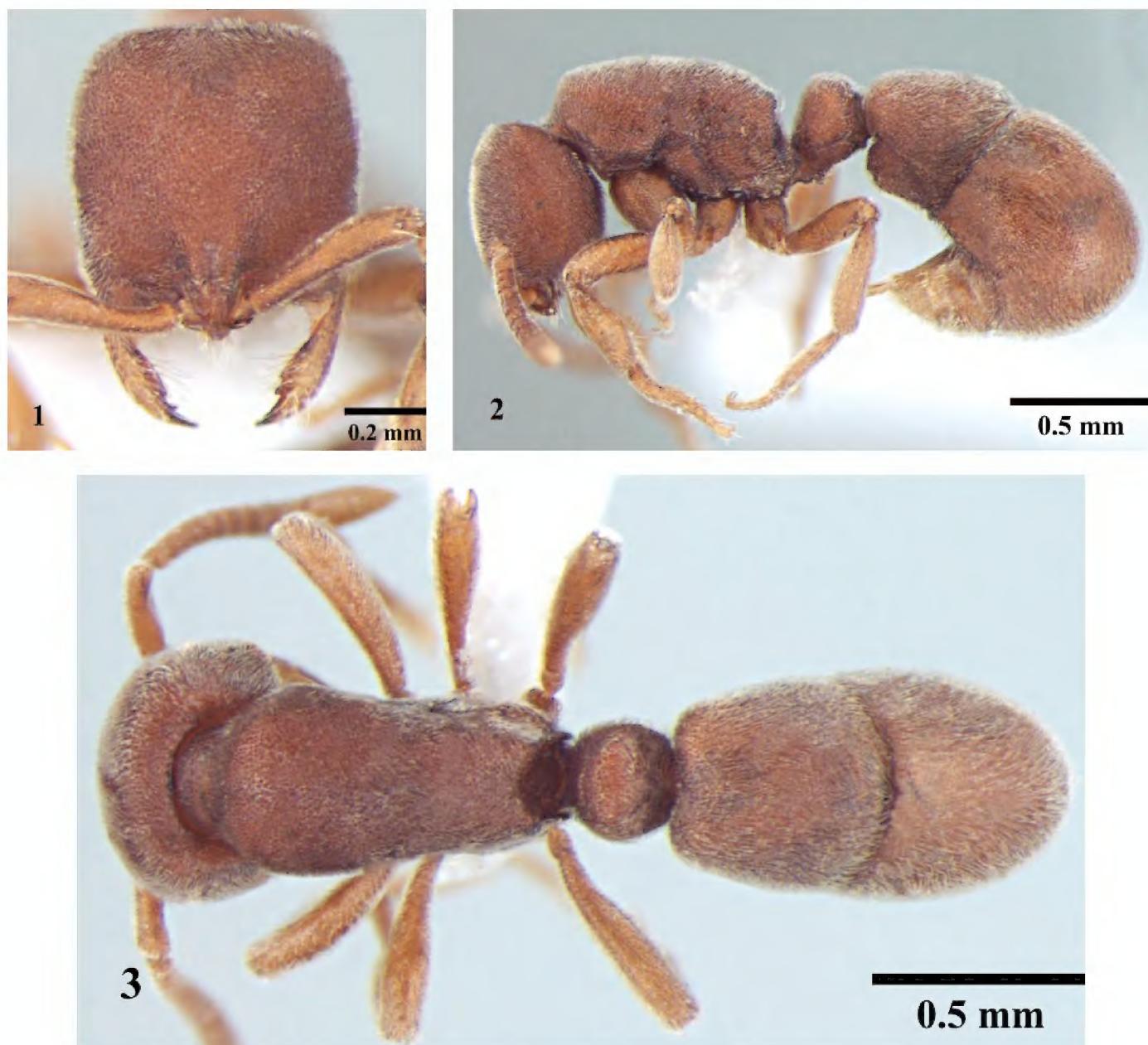
Figs 1–3

*Proceratium williamsi* Tiwari, in Mathew and Tiwari 2000: 272, Figs 14–15 (w.). Holotype and paratype workers: Meghalaya, Khasi hills, Shillong, India [ZSIK].

*Proceratium bhutanense* De Andrade, in Baroni Urbani and De Andrade 2003: 278, Figs 116–117 (w.). Holotype and paratype workers: Phuntsholing, Bhutan [NHMB]; one paratype worker Phuntsholing, Bhutan [MRSN]. **Syn. n.**

**Material examined.** Paratype, worker, Meghalaya, Khasi hills, Shillong, India [ZSIK]; Worker [BMNH] (coll. R. Mathew, Det. De Andrade); worker photographs also examined on AntWeb ([www.antweb.org](http://www.antweb.org)): CASENT0281860. *Other Material: Uttarakhand:* Dakpathar, 750m, 4 (w.), 20.viii.2009; Rajaji Forest Area, 660m, 3(w.), 11.viii.2009, 1(w.), 12.viii.2009 (coll. Aijaz A. Wachkoo) [PUPAC]. *West Bengal:* Darjeeling, 1850m, 4(w.), 20.vi.2009 (coll. Irfan Gul) [PUPAC]. *Meghalaya:* Cherapunji, 1200m, 3(w.), 2.iv.2009 (coll. Irfan Gul); Khasi hills, Shillong, 1496m, 3(w.), 1(q.), 10.iv.2009 (coll. Irfan Gul) [PUPAC].

**Ecology.** This species was found mainly in leaf litter of primary, subtropical forests of Himalaya and occasionally in soil samples of secondary forests collected in cool



**Figures 1–3.** Worker; *Proceratium williamsi* Tiwari, 2000. **1** Head in full-face view **2** Body, lateral view **3** Body, dorsal view.

shady places. Although infrequent in collections, this species seems to be widely distributed throughout the Himalayan ranges.

**Remarks.** Examination of the specimens coupled with the images and descriptions reveal that there are no characters which could delimit *P. bhutanense* and *P. williamsi*. Moreover, the studied material does not exhibit any marked variation throughout the collection range, thereby enabling us to confidently treat *P. bhutanense* as a junior synonym of *P. williamsi*.

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## References

Baroni Urbani C, De Andrade ML (2003) The ant genus *Proceratium* in the extant and fossil record. Museo Regionale di Scienze Naturali - Torino Monographie 36: 1–492.

Bharti H (2011) List of Indian Ants (Hymenoptera: Formicidae). Halteres 3: 79–87.

Bolton B (2012) An Online Catalog of the Ants of the World. AntCat. <http://www.antcat.org/>

Bolton B, Alpert G, Ward PS, Naskrecki P (2007) Bolton's Catalogue of Ants of the World: 1758–2005 [CD-ROM]. Harvard University Press, Cambridge, Massachusetts.

Mathew R, Tiwari RN (2000) Insecta: Hymenoptera: Formicidae, Fauna of Meghalaya, Part 7 State Fauna Series 4. Zoological Survey of India, Calcutta, 409 pp.